

# **FEDERAL NONNUCLEAR ENERGY RESEARCH AND DEVELOPMENT ACT OF 1974**

[Public Law 93–577, as Amended]

[As Amended Through P.L. 109–58, Enacted August 8, 2005]

AN ACT To establish a national program for research and development in  
nonnuclear energy sources.

*Be it enacted by the Senate and House of Representatives of the  
United States of America in Congress assembled,*

## **SHORT TITLE AND DEFINITIONS**

SEC. 1. (a) This Act may be cited as the “Federal Nonnuclear  
Energy Research and Development Act of 1974”.

(b) In this Act:

(1) The term “Department” means the Department of En-  
ergy.

(2) The term “Secretary” means the Secretary of Energy.

[42 U.S.C. 5901 note]

## **STATEMENT OF FINDINGS**

SEC. 2. The Congress hereby finds that—

(a) The Nation is suffering from a shortage of environmentally  
acceptable forms of energy.

(b) Compounding this energy shortage is our past and present  
failure to formulate a comprehensive and aggressive research and  
development program designed to make available to American con-  
sumers our large domestic energy reserves including fossil fuels,  
nuclear fuels, geothermal resources, solar energy, and other forms  
of energy. This failure is partially because the unconventional en-  
ergy technologies have not been judged to be economically competi-  
tive with traditional energy technologies.

(c) The urgency of the Nation’s energy challenge will require  
commitments similar to those undertaken in the Manhattan and  
Apollo projects; it will require that the Nation undertake a re-  
search, development, and demonstration program in nonnuclear en-  
ergy technologies with a total Federal investment which may reach  
or exceed \$20,000,000,000 over the next decade.

(d) In undertaking such program, full advantage must be taken  
of the existing technical and managerial expertise in the various  
energy fields within Federal agencies and particularly in the pri-  
vate sector.

(e) The Nation’s future energy needs can be met if a national  
commitment is made now to dedicate the necessary financial re-  
sources, to enlist our scientific and technological capabilities, and

to accord the proper priority to developing new nonnuclear energy options to serve national needs, conserve vital resources, and protect the environment.

【42 U.S.C. 5901】

#### STATEMENT OF POLICY

SEC. 3. (a) It is the policy of the Congress to develop on an urgent basis the technological capabilities to support the broadest range of energy policy options through conservation and use of domestic resources by socially and environmentally acceptable means.

(b)(1) The Congress declares the purpose of this Act to be to establish and vigorously conduct a comprehensive, national program of basic and applied research and development, including but not limited to demonstrations of practical applications, of all potentially beneficial energy sources and utilization technologies, within the Department.

(2) In carrying out this program, the Secretary shall be governed by the terms of this Act and other applicable provisions of law with respect to all nonnuclear aspects of the research, development, and demonstration program; and the policies and provisions of the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.), and other provisions of law shall continue to apply to the nuclear research, development, and demonstration program.

(3) In implementing and conducting the research, development, and demonstration programs pursuant to this Act, the Secretary shall incorporate programs in specific nonnuclear technologies previously enacted into law, including those established by the Solar Heating and Cooling Demonstration Act of 1974 (Public Law 93–409), the Geothermal Energy Research, Development, and Demonstration Act of 1974 (Public Law 93–410), and the Solar Energy Research, Development, and Demonstration Act of 1974 (Public Law 93–473).

【42 U.S.C. 5902】

#### DUTIES AND AUTHORITIES OF THE SECRETARY

SEC. 4. The Secretary shall—

(a) review the current status of nonnuclear energy resources and current nonnuclear energy research and development activities, including research and development being conducted by Federal and non-Federal entities;

(b) formulate and carry out a comprehensive Federal nonnuclear energy research, development, and demonstration program which will expeditiously advance the policies established by this Act and other relevant legislation establishing programs in specific energy technologies;

(c) utilize the funds authorized pursuant to this Act to advance energy research and development by initiating and maintaining, through fund transfers, grants or contracts, energy research, development and demonstration programs or activities utilizing the facilities, capabilities, expertise, and experience of Federal agencies, national laboratories, universities, nonprofit organizations, industrial entities, and other non-Fed-

eral entities which are appropriate to each type of research, development, and demonstration activity;

(d) establish procedures for periodic consultation with representatives of science, industry, environmental organizations, consumers, and other groups who have special expertise in the areas of energy research, development, and technology; and

(e) initiate programs to design, construct, and operate energy facilities of sufficient size to demonstrate the technical and economic feasibility of utilizing various forms of non-nuclear energy.

[42 U.S.C. 5903]

#### GOVERNING PRINCIPLES

SEC. 5. (a) The Congress authorizes and directs that the comprehensive program in research, development, and demonstration required by this Act shall be designed and executed according to the following principles:

(1) Energy conservation shall be a primary consideration in the design and implementation of the Federal nonnuclear energy program. For the purposes of this Act, energy conservation means both improvement in efficiency of energy production and use, and reduction in energy waste.

(2) The environmental and social consequences of a proposed program shall be analyzed and considered in evaluating its potential.

(3) Any program for the development of a technology which may require significant consumptive use of water after the technology has reached the stage of commercial application shall include thorough consideration of the impacts of such technology and use on water resources pursuant to the provisions of section 13.

(4) Heavy emphasis shall be given to those technologies which utilize renewable or essentially inexhaustible energy sources.

(5) The potential for production of net energy by the proposed technology at the stage of commercial application shall be analyzed and considered in evaluating proposals.

(b) The Congress further directs that the execution of the comprehensive research, development, and demonstration program shall conform to the following principles:

(1) Research and development of nonnuclear energy sources shall be pursued in such a way as to facilitate the commercial availability of adequate supplies of energy to all regions of the United States.

(2) In determining the appropriateness of Federal involvement in any particular research and development undertaking, the Administrator shall give consideration to the extent to which the proposed undertaking satisfies criteria including, but not limited to, the following:

(A) The urgency of public need for the potential results of the research, development, or demonstration effort is high, and it is unlikely that similar results would be

achieved in a timely manner in the absence of Federal assistance.

(B) The potential opportunities for non-Federal interests to recapture the investment in the undertaking through the normal commercial utilization of proprietary knowledge appear inadequate to encourage timely results.

(C) The extent of the problems treated and the objectives sought by the undertaking are national or widespread in their significance.

(D) There are limited opportunities to induce non-Federal support of the undertaking through regulatory actions, end use controls, tax and price incentives, public education, or other alternatives to direct Federal financial assistance.

(E) The degree of risk of loss of investment inherent in the research is high, and the availability of risk capital to the non-Federal entities which might otherwise engage in the field of the research is inadequate for the timely development of the technology.

(F) The magnitude of the investment appears to exceed the financial capabilities of potential non-Federal participants in the research to support effective efforts.

[42 U.S.C. 5904]

#### COMPREHENSIVE PLANNING AND PROGRAMMING

SEC. 6. (a) Pursuant to the authority and directions of this Act and the Energy Reorganization Act of 1974 (Public Law 93-438), the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), and titles XX through XXIII of the Energy Policy Act of 1992, the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992, shall transmit to the Congress, on or before June 30, 1975, a comprehensive plan for energy research, development, and demonstration. This plan shall be appropriately revised annually as provided in section 15(a). Such plan shall be designated to achieve—

(1) solutions to immediate and short-term (the period up to 5 years after submission of the plan or its annual revision) energy supply system and associated environmental problems;

(2) solutions to middle-term (the period from 5 years to 10 years after submission of the plan or its annual revision) energy supply system and associated environmental problems; and

(3) solutions to long-term (the period beyond 10 years after submission of the plan or its annual revision) energy supply system and associated environmental problems.

(b)(1) Based on the comprehensive energy research, development, and demonstration plan developed under subsection (a), the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992, shall develop and transmit to the Congress, on or before June 30, 1975, a comprehensive nonnuclear energy research, development, and demonstration program to implement the nonnuclear research, development and demonstration aspects of the comprehensive plan. Such

program shall be updated and transmitted to the Congress annually as part of the report required under section 15.

(2) This program shall be designed to achieve solutions to the energy supply and associated environmental problems in the immediate and short-term, middle-term, and long-term time intervals described in subsection (a)(1) through (3). In formulating the non-nuclear aspects of this program, the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992, shall evaluate the economic, environmental, and technological merits of each aspect of the program.

(3) The Secretary shall assign program elements and activities in specific nonnuclear energy technologies to the short-term, middle-term, and long-term time intervals, and shall present full and complete justification for these assignments and the degree of emphasis for each. These program elements and activities shall include, but not be limited to, research, development, and demonstrations designed—

(A) to advance energy conservation technologies, including but not limited to—

(i) productive use of waste, including garbage, sewage, agricultural wastes, and industrial waste heat;

(ii) reuse and recycling of materials and consumer products;

(iii) improvements in automobile design for increased efficiency and lowered emissions, including investigation of the full range of alternatives to the internal combustion engine and systems of efficient public transportation; and

(iv) advanced urban and architectural design to promote efficient energy use in the residential and commercial sectors, improvements in home design and insulation technologies, small thermal storage units and increased efficiency in electrical appliances and lighting fixtures;

(B) to accelerate the commercial demonstration of technologies for producing low-sulfur fuels suitable for boiler use;

(C) to demonstrate improved methods for the generation, storage, and transmission of electrical energy through (i) advances in gas turbine technologies, combined power cycles, the use of low British thermal unit gas and, if practicable, magnetohydrodynamics; (ii) storage systems to allow more efficient load following, including the use of inertial energy storage systems; and (iii) improvement in cryogenic transmission methods;

(D) to accelerate the commercial demonstration of technologies for producing substitutes for natural gas, including coal gasification: *Provided*, That the Secretary shall invite and consider proposals from potential participants based upon Federal assistance and participation in the form of a joint Federal-industry corporation, and recommendations pursuant to this clause shall be accompanied by a report on the viability of using this form of Federal assistance or participation;

(E) to accelerate the commercial demonstration of technologies for producing syncrude and liquid petroleum products from coal: *Provided*, That the Secretary shall invite and consider proposals from potential participants based upon Federal

assistance and participation through guaranteed prices or purchase of the products, and recommendations pursuant to this clause shall be accompanied by a report on the viability of using this form of Federal assistance or participation;

(F) in accordance with the program authorized by the Geothermal Energy Research, Development, and Demonstration Act of 1974 (Public Law 93-410), to accelerate the commercial demonstration of geothermal energy technologies;

(G) to demonstrate the production of syncrude from oil shale by all promising technologies including in situ technologies;

(H) to demonstrate new and improved methods for the extraction of petroleum resources, including secondary and tertiary recovery of crude oil;

(I) to demonstrate the economics and commercial viability of solar energy for residential and commercial energy supply applications in accordance with the program authorized by the Solar Heating and Cooling Demonstration Act of 1974 (Public Law 93-409);

(J) to accelerate the commercial demonstration of environmental control systems for energy technologies developed pursuant to this Act;

(K) to investigate the technical and economic feasibility of tidal power for supplying electrical energy;

(L) to commercially demonstrate advanced solar energy technologies in accordance with the Solar Energy Research, Development, and Demonstration Act of 1974 (Public Law 93-473);

(M) to determine the economics and commercial viability of the production of synthetic fuels such as hydrogen and methanol;

(N) to commercially demonstrate the use of fuel cells for central station electric power generation;

(O) to determine the economics and commercial viability of in situ coal gasification;

(P) to improve techniques for the management of existing energy systems by means of quality control; application of systems analysis, communications, and computer techniques; and public information with the objective of improving the reliability and efficiency of energy supplies and encourage the conservation of energy resources;

(Q) to improve methods for the prevention and cleanup of marine oil spills;

(R) to implement the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989 (42 U.S.C. 12001 et seq.); and

(S) to implement titles XX through XXIII of the Energy Policy Act of 1992.

(c) Based upon the comprehensive plan developed under subsection (a), the Secretary, in consultation with the Advisory Board established under section 2302 of the Energy Policy Act of 1992, shall develop and transmit to the Congress, on or before September 1, 1978, a comprehensive environment and safety program to insure the full consideration and evaluation of all environmental,

health, and safety impacts of each element, program, or initiative contained in the nuclear and nonnuclear energy research, development, and demonstration plans. Such program shall be updated and transmitted to the Congress annually as part of the report required under section 15.

【42 U.S.C. 5905】

#### FORMS OF FEDERAL ASSISTANCE

SEC. 7. (a) In carrying out the objectives of this Act, the Secretary may utilize various forms of Federal assistance and participation which may include but are not limited to—

(1) joint Federal-industry experimental, demonstration, or commercial corporations consistent with the provisions of subsection (b) of this section;

(2) contractual arrangements with non-Federal participants including corporations, consortia, universities, governmental entities and nonprofit institutions;

(3) contracts for the construction and operation of federally owned facilities;

(4) Federal purchases or guaranteed price of the products of demonstration plants or activities consistent with the provisions of subsection (c);

(5) Federal loans to non-Federal entities conducting demonstrations of new technologies;

(6) incentives, including financial awards, to individual inventors, such incentives to be designed to encourage the participation of a large number of such inventors; and

(7) Federal loan guarantees and commitments thereof as provided in section 19.

(b) Joint Federal-industry corporations proposed for congressional authorization pursuant to this Act shall be subject to the provisions of section 9 of this Act and shall conform to the following guidelines except as otherwise authorized by Congress:

(1) Each such corporation may design, construct, operate, and maintain one or more experimental, demonstration, or commercial-size facilities, or other operations which will ascertain the technical, environmental, and economic feasibility of a particular energy technology. In carrying out this function, the corporation shall be empowered, either directly or by contract, to utilize commercially available technologies, perform tests, or design, construct, and operate pilot plants, as may be necessary for the design of the full-scale facility.

(2) Each corporation shall have—

(A) a Board of nine directors consisting of individuals who are citizens of the United States, of whom one shall be elected annually by the Board to serve as Chairman. The Board shall be empowered to adopt and amend by-laws. Five members of the Board shall be appointed by the President of the United States, by and with the advice and consent of the Senate, and four members of the Board shall be appointed by the President on the basis of recommendations received by him from any non-Federal enti-

ty or entities entering into contractual arrangements to participate in the corporation;

(B) a President and such other officers and employees as may be named and appointed by the Board (with the rates of compensation of all officers and employees being fixed by the Board); and

(C) the usual powers conferred upon corporations by the laws of the District of Columbia.

(3) An appropriate time interval, not to exceed 12 years, shall be established for the term of Federal participation in the corporation, at the expiration of which the Board of Directors shall take such action as may be necessary to dissolve the corporation or otherwise terminate Federal participation and financial interests. In carrying out such dissolution, the Board of Directors shall dispose of all physical facilities of the corporation in such manner and subject to such terms and conditions as the Board determines are in the public interest and consistent with existing law; and a share of the appraised value of the corporate assets proportional to the Federal participation in the corporation, including the proceeds from the disposition of such facilities, on the date of its dissolution, after satisfaction of all its legal obligations, shall be made available to the United States and deposited in the Treasury of the United States as miscellaneous receipts. All patent rights of the corporation shall, on such date of dissolution, be vested in the Secretary: *Provided*, That Federal participation may be terminated prior to the time established in the authorizing Act upon recommendation of the Board of Directors.

(4) Any commercially valuable product produced by demonstration facilities shall be disposed of in such manner and under such terms and conditions as the corporation shall prescribe. All revenues received by the corporation from the sale of such products shall be available to the corporation for use by it in defraying expenses incurred in connection with carrying out its functions to which this Act applies.

(5) The estimated Federal share of the construction, operation, and maintenance cost over the life of each corporation shall be determined in order to facilitate a single congressional authorization of the full amount at the time of establishment of the corporation.

(6) The Federal share of the cost of each such corporation shall reflect (A) the technical and economic risk of the venture, (B) the probability of any financial return to the non-Federal participants arising from the venture, (C) the financial capability of the potential non-Federal participants, and (D) such other factors as the Secretary may set forth in proposing the corporation: *Provided*, That in no instance shall the Federal share exceed 90 per centum of the cost.

(7) No such corporation shall be established unless previously authorized by specific legislation enacted by the Congress.

(c) Competitive systems of price supports proposed for congressional authorization pursuant to this Act shall conform to the following guidelines:



(1) The Secretary shall determine the types and capacities of the desired full-scale, commercial-size facility or other operation which would demonstrate the technical, environmental, and economic feasibility of a particular nonnuclear energy technology.

(2) The Secretary may award planning grants for the purpose of financing a study of the full cycle economic and environmental costs associated with the demonstration facility selected pursuant to paragraph (1) of this subsection. Such planning grants may be awarded to Federal and non-Federal entities including, but not limited to, industrial entities, universities, and nonprofit organizations. Such planning grants may also be used by the grantee to prepare a detailed and comprehensive bid to construct the demonstration facility.

(3) Following the completion of the studies pursuant to the planning grants awarded under paragraph (2) of this subsection regarding each such potential price supported demonstration facility for which the Secretary intends to request congressional authorization, he shall invite bids from all interested parties to determine the minimum amount of Federal price support needed to construct the demonstration facility. The Secretary may designate one or more competing entities, each to construct one commercial demonstration facility. Such designation shall be made on the basis of those entities, (A) commitment to construct the demonstration facility at the minimum level of Federal price supports, (B) detailed plan of environmental protection, and (C) proposed design and operation of the demonstration facility.

(4) The construction plans and actual construction of the demonstration facility, together with all related facilities, shall be monitored by the Environmental Protection Agency. If additional environmental requirements are imposed by the Secretary after the designation of the successful bidders and if such additional environmental requirements result in additional costs, the Secretary is authorized to renegotiate the support price to cover such additional costs.

(5) The estimated amount of the Federal price support for a demonstration facility's product over the life of such facility shall be determined by the Secretary to facilitate a single congressional authorization of the full amount of such support at the time of the designation of the successful bidders.

(6) No price support program shall be implemented unless previously authorized by specific legislation enacted by the Congress.

(d) Nothing in this section shall preclude Federal participation in and support for, joint university-industry nonnuclear energy research efforts.

【42 U.S.C. 5906】

#### DEMONSTRATIONS

SEC. 8. (a) The Secretary is authorized to—

(1) identify opportunities to accelerate the commercial applications of new energy technologies, and provide Federal as-

sistance for or participation in demonstration projects (including pilot plants demonstrating technological advances and field demonstrations of new methods and procedures, and demonstrations of prototype commercial applications for the exploration, development, production, transportation, conversion, and utilization of energy resources); and

(2) enter into cooperative agreements with non-Federal entities to demonstrate the technical feasibility and economic potential of energy technologies on a prototype or full-scale basis.

(b) In reviewing potential projects, the Secretary shall consider criteria including but not limited to—

(1) the anticipated research, development, and application objectives to be achieved by the activities or facilities proposed;

(2) the economic, environmental, and societal significance which a successful demonstration may have for the national fuels and energy system;

(3) the relationship of the proposal to the criteria of priority set forth in section 5(b)(2);

(4) the availability of non-Federal participants to construct and operate the facilities or perform the activities associated with the proposal and to contribute to the financing of the proposal;

(5) the total estimated cost including the Federal investment and the probable time schedule;

(6) the proposed participants and the proposed financial contributions of the Federal Government and of the non-Federal participants; and

(7) the proposed cooperative arrangement, agreements among the participants, and form of management of the activities.

(c)(1) A financial award under this section may be made only to the extent of the Federal share of the estimated total design and construction costs, plus operation and maintenance costs.

(2) For the purposes of this Act the non-Federal share may be in any form, including, but not limited to, lands or interests therein needed for the project or personal property or services, the value of which shall be determined by the Secretary.

(d)(1) The Administrator of the Energy Research and Development Administration shall, within six months of enactment of this Act, promulgate regulations establishing procedures for submission of proposals to the Energy Research and Development Administration for the purposes of this Act. Such regulations shall establish a procedure for selection of proposals which—

(A) provides that projects will be carried out under such conditions and varying circumstances as will assist in solving energy extraction, transportation, conversion, conservation, and end-use problems of various areas and regions, under representative geological, geographic, and environmental conditions; and

(B) provides time schedules for submission of, and action on, proposal requests for the purposes of implementing the goals and objectives of this Act.

(2) Such regulations also shall specify the types and form of the information, data, and support documentation that are to be

contained in proposals for each form of Federal assistance or participation set forth in subsection 7(a): *Provided*, That such proposals to the extent possible shall include, but not be limited to—

- (A) specification of the technology;
- (B) description of prior pilot plant operating experience with the technology;
- (C) preliminary design of the demonstration plant;
- (D) time tables containing proposed construction and operation plans;
- (E) budget-type estimates of construction and operating costs;
- (F) description and proof of title to land for proposed site, natural resources, electricity and water supply and logistical information related to access to raw materials to construct and operate the plant and to dispose of salable products produced from the plant;
- (G) analysis of the environmental impact of the proposed plant and plans for disposal of wastes resulting from the operation of the plant;
- (H) plans for commercial use of the technology if the demonstration is successful;
- (I) plans for continued use of the plant if the demonstration is successful; and
- (J) plans for dismantling of the plant if the demonstration is unsuccessful or otherwise abandoned.

(3) The Secretary shall from time to time review and, as appropriate, modify and repromulgate regulations issued pursuant to this section.

(e) If the estimate of the Federal investment with respect to construction costs of any demonstration project proposed to be established under this section exceeds \$50,000,000, no amount may be appropriated for such project except as specifically authorized by legislation hereafter enacted by the Congress.

(f) If the total estimated amount of the Federal contribution to the construction cost of a demonstration project does not exceed \$50,000,000, the Secretary is authorized to proceed with the negotiation of agreements and implementation of the proposal subject to the availability of funds under the authorization of appropriations pursuant to section 16: *Provided*, That if such Federal contribution to the construction cost is estimated to exceed \$25,000,000 the Secretary shall provide a full and comprehensive report on the proposed demonstration project to the appropriate committees of the Congress and no funds may be expended for any agreement under the authority granted by this section prior to the expiration of sixty calendar days (not including any day on which either House of Congress is not in session because of an adjournment of more than three calendar days to a day certain) from the date on which the Secretary's report on the proposed project is received by the Congress. Such reports shall contain an analysis of the extent to which the proposed demonstration satisfies the criteria specified in subsection (b) of this section.

【42 U.S.C. 5907】

## PATENT POLICY

SEC. 9. (a) Whenever any invention is made or conceived in the course of or under any contract of the Department, other than nuclear energy research, development, and demonstration pursuant to the Atomic Energy Act of 1954 (42 U.S.C. 2011 et seq.) and the Secretary determines that—

(1) the person who made the invention was employed or assigned to perform research, development, or demonstration work and the invention is related to the work he was employed or assigned to perform, or that it was within the scope of his employment duties, whether or not it was made during working hours, or with a contribution by the Government of the use of Government facilities, equipment, materials, allocated funds, information proprietary to the Government, or services of Government employees during working hours; or

(2) the person who made the invention was not employed or assigned to perform research, development, or demonstration work, but the invention is nevertheless related to the contract or to the work or duties he was employed or assigned to perform, and was made during working hours, or with a contribution from the Government of the sort referred to in clause (1);

title to such invention shall vest in the United States, and if patents on such invention are issued they shall be issued to the United States, unless in particular circumstances the Secretary waives all or any part of the rights of the United States to such invention in conformity with the provisions of this section.

(b) Each contract entered into by the Department with any person shall contain effective provisions under which such person shall furnish promptly to the Department a written report containing full and complete technical information concerning any invention, discovery, improvement, or innovation which may be made in the course of or under such contract.

(c) Under such regulations in conformity with the provisions of this section as the Secretary shall prescribe, the Secretary may waive all or any part of the rights of the United States under this section with respect to any invention or class of inventions made or which may be made by any person or class of persons in the course of or under any contract of the Department if he determines that the interests of the United States and the general public will best be served by such waiver. The Department shall maintain a publicly available, periodically updated record of waiver determinations. In making such determinations, the Secretary shall have the following objectives:

(1) Making the benefits of the energy research, development, and demonstration program widely available to the public in the shortest practicable time.

(2) Promoting the commercial utilization of such inventions.

(3) Encouraging participation by private persons in the Department's energy research, development, and demonstration program.

(4) Fostering competition and preventing undue market concentration or the creation or maintenance of other situations inconsistent with the antitrust laws.

(d) In determining whether a waiver to the contractor at the time of contracting will best serve the interests of the United States and the general public, the Secretary shall specifically include as considerations—

(1) the extent to which the participation of the contractor will expedite the attainment of the purposes of the program;

(2) the extent to which a waiver of all or any part of such rights in any or all fields of technology is needed to secure the participation of the particular contractor;

(3) the extent to which the contractor's commercial position may expedite utilization of the research, development, and demonstration program results;

(4) the extent to which the Government has contributed to the field of technology to be funded under the contract;

(5) the purpose and nature of the contract, including the intended use of the results developed thereunder;

(6) the extent to which the contractor has made or will make substantial investment of financial resources or technology developed at the contractor's private expense which will directly benefit the work to be performed under the contract;

(7) the extent to which the field of technology to be funded under the contract has been developed at the contractor's private expense;

(8) the extent to which the Government intends to further develop to the point of commercial utilization the results of the contract effort;

(9) the extent to which the contract objectives are concerned with the public health, public safety, or public welfare;

(10) the likely effect of the waiver on competition and market concentration; and

(11) in the case of a nonprofit educational institution, the extent to which such institution has a technology transfer capability and program, approved by the Secretary as being consistent with the applicable policies of this section.

(e) In determining whether a waiver to the contractor or inventor of rights to an identified invention will best serve the interests of the United States and the general public, the Secretary shall specifically include as considerations paragraphs (4) through (11) of subsection (d) as applied to the invention and—

(1) the extent to which such waiver is a reasonable and necessary incentive to call forth private risk capital for the development and commercialization of the invention; and

(2) the extent to which the plans, intentions, and ability of the contractor or inventor will obtain expeditious commercialization of such invention.

(f) Whenever title to an invention is vested in the United States, there may be reserved to the contractor or inventor—

(1) a revocable or irrevocable nonexclusive, paid-up license for the practice of the invention throughout the world; and

(2) the rights to such invention in any foreign country where the United States has elected not to secure patent rights

and the contractor elects to do so, subject to the rights set forth in paragraphs (2), (3), (6), and (7) of subsection (h): *Provided*, That when specifically requested by the Department and three years after issuance of such a patent, the contract shall submit the report specified in subsection (h)(1) of this section.

[(g), (h), (i) Repealed by Public Law 96–517.]

(j) The Secretary shall, in granting waivers or licenses, consider the small business status of the applicant.

(k) The Secretary is authorized to take all suitable and necessary steps to protect any invention or discovery to which the United States hold title, and to require that contractors or persons who acquire rights to inventions under this section protect such inventions.

(l) The Department shall be considered a defense agency of the United States for the purpose of chapter 17 of title 35 of the United States Code.

(m) As used in this section—

(1) the term “person” means any individual, partnership, corporation, association, institution, or other entity;

(2) the term “contract” means any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work, and includes any assignment, substitution of parties, or subcontract executed or entered into thereunder;

(3) the term “made”, when used in relation to any invention means the conception or first actual reduction to practice of such invention;

(4) the term “invention” means inventions or discoveries, whether patented or unpatented; and

(5) the term “contractor” means any person having a contract with or on behalf of the Department.

(n) Within twelve months after the date of the enactment of this Act, the Secretary with the participation of the Attorney General, the Secretary of Commerce, and other officials as the President may designate, shall submit to the President and the appropriate congressional committees a report concerning the applicability of existing patent policies affecting the programs under this Act, along with his recommendations for amendments or additions to the statutory patent policy, including his recommendations on mandatory licensing, which he deems advisable for carrying out the purposes of this Act.

[42 U.S.C. 5908]

#### RELATIONSHIP TO ANTITRUST LAWS

SEC. 10. (a) Nothing in this Act shall be deemed to convey to any individual, corporation, or other business organization immunity from civil or criminal liability, or to create defenses to actions, under the antitrust laws.

(b) As used in this section, the term “antitrust law” means—

(1) the Act entitled “An Act to protect trade and commerce against unlawful restraints and monopolies”, approved July 2, 1890 (15 U.S.C. 1 et seq.), as amended;

(2) the Act entitled “An Act to supplement existing laws against unlawful restraints and monopolies, and for other purposes”, approved October 15, 1914 (15 U.S.C. 12 et seq.) as amended;

(3) the Federal Trade Commission Act (15 U.S.C. 41 et seq.), as amended;

(4) sections 73 and 74 of the Act entitled “An Act to reduce taxation, to provide revenue for the Government, and for other purposes”, approved August 27, 1894 (15 U.S.C. 8 and 9), as amended; and

(5) the Act of June 19, 1936, chapter 592 (15 U.S.C. 13, 13a, 13b, and 21a).

【42 U.S.C. 5909】

【SEC. 11. Repealed by section 2021(i) of Public Law 104–66 (109 Stat. 727).】

#### ACQUISITION OF ESSENTIAL MATERIALS

SEC. 12. (a) The President may, by rule or order, require the allocation of, or the performance under contracts or orders (other than contracts of employment) relating to, supplies of materials and equipment if he finds that—

(1) such supplies are scarce, critical, and essential to carry out the purposes of this Act; and

(2) such supplies cannot reasonably be obtained without exercising the authority granted by this section.

(b) A rule or order under subsection (a) shall be considered to be a major rule subject to chapter 8 of title 5, United States Code.

【42 U.S.C. 5911】

#### WATER RESOURCE EVALUATION

SEC. 13. (a) The Water Resources Council shall undertake assessments of water resource requirements and water supply availability for any nonnuclear energy technology and any probable combinations of technologies which are the subject of Federal research and development efforts authorized by this Act, and the commercial development of which could have significant impacts on water resources. In the preparation of its assessment, the Council shall—

(1) utilize to the maximum extent practicable data on water supply and demand available in the files of member agencies of the Council;

(2) collect and compile any additional data it deems necessary for complete and accurate assessments;

(3) give full consideration to the constraints upon availability imposed by treaty, compact, court decree, State water laws, and water rights granted pursuant to State and Federal law;

(4) assess the effects of development of such technology on water quality;

(5) include estimates of cost associated with production and management of the required water supply, and the cost of

disposal of waste water generated by the proposed facility or process;

(6) assess the environmental, social, and economic impact of any change in use of currently utilized water resource that may be required by the proposed facility or process; and

(7) consult with the Council on Environmental Quality.

(b) For any proposed demonstration project which may involve a significant impact on water resources, the Secretary shall, as a precondition of Federal assistance to that project, request the Water Resources Council to prepare an assessment of water requirements and availability for such project. A report on the assessment shall be published in the Federal Register for public review thirty days prior to the expenditure of Federal funds on the demonstration.

(c) For any proposed Federal assistance for commercial application of energy technologies pursuant to this Act, the Water Resource Council shall, as a precondition of such Federal assistance, provide to the Secretary an assessment of the availability of adequate water resources for such commercial application and an evaluation of the environmental, social, and economic impacts of the dedication of water to such uses.

(d) Reports of assessments and evaluations prepared by the Council pursuant to subsections (a) and (c) shall be published in the Federal Register and at least ninety days shall be provided for public review and comment. Comments received shall accompany the reports when they are submitted to the Secretary and shall be available to the public.

(e) The Council shall include a broad survey and analysis of regional and national water resource availability for energy development in the biennial assessment required by section 102(a) of the Water Resources Planning Act (42 U.S.C. 1962a-1(a)).

(f) The Secretary shall, upon enactment of this subsection, be a member of the Council.

【42 U.S.C. 5912】

#### ENERGY-RELATED INVENTIONS

SEC. 14. The National Bureau of Standards shall give particular attention to the evaluation of all promising energy-related inventions, particularly those submitted by individual inventors and small companies for the purpose of obtaining direct grants from the Administrator. The National Bureau of Standards is authorized to promulgate regulations in the furtherance of this section.

【42 U.S.C. 5913】

#### REPORTS TO CONGRESS

SEC. 15. (a) Concurrent with the submission of the President's annual budget to the Congress, the Administrator shall submit to the Congress each year—

(1) a report detailing the activities carried out pursuant to this Act during the preceding fiscal year;



(2) a detailed description of the comprehensive plan for nuclear and nonnuclear energy research, development, and demonstration then in effect under section 6(a); and

(3) a detailed description of the comprehensive nonnuclear research, development, and demonstration program then in effect under section 6(b) including its program elements and activities,

setting forth such modifications in the comprehensive plan referred to in clause (2) and the comprehensive program referred to in clause (3) as may be necessary to revise appropriately such plan and program in the light of the activities referred to in clause (1) and any changes in circumstances which may have occurred since the last previous report under this subsection.

(b) The description of the comprehensive nonnuclear research, development, and demonstration program submitted under subsection (a)(2) shall include a statement setting forth—

(1) the anticipated research, development, and application objections to be achieved by the proposed program;

(2) the economic, environmental, and societal significance which the proposed program may have;

(3) the total estimated costs of individual program items;

(4) the estimated relative financial contributions of the Federal Government and non-Federal participants in the research and development program;

(5) the relationship of the proposed program to any Federal national energy or fuel policies; and

(6) the relationship of any short-term undertakings and expenditures to long-range goals.

(c) The reports required by subsections (a) and (b) of this section will satisfy the reporting requirements of section 307(a) of the Energy Reorganization Act of 1974 (Public Law 93-438) insofar as is concerned activities, goals, priorities, and plans of the Energy Research and Development Administration pertaining to non-nuclear energy.

[42 U.S.C. 5914]

#### AUTHORIZATION OF APPROPRIATIONS

SEC. 16. There may be appropriated to the Secretary to carry out the purposes of this Act such sums as may be authorized in annual authorization Acts.

[42 U.S.C. 5915]

#### CENTRAL SOURCE OF NONNUCLEAR ENERGY INFORMATION

SEC. 17. The Secretary shall promptly establish, develop, acquire, and maintain a central source of information on all energy resources and technology in furtherance of the research, development, and demonstration mission carried out directly or indirectly under this Act. When the Secretary determines that such information is needed to carry out the purposes of this Act, the Secretary may acquire proprietary and other information (a) by purchase through negotiation or by donation from any person, or (b) from another Federal agency. The information maintained by the Secretary shall be made available to the public, subject to the provisions of

section 552 of title 5, United States Code, and section 1905 of title 18, United States Code, and to other Government agencies in a manner that will facilitate its dissemination; *Provided*, That upon a showing satisfactory to the Secretary by any person that any information, or portion thereof, obtained under this section by the Secretary directly or indirectly from such person, would, if made public, divulge (1) trade secrets or (2) other proprietary information of such person, the Secretary shall not disclose such information and disclosure thereof shall be punishable under section 1905 of title 18, United States Code: *Provided further*, That the Secretary shall, upon request, provide such information to (A) any delegate of the Secretary for the purpose of carrying out this Act, and (B) the Attorney General, the Secretary of Agriculture, the Secretary of the Interior, the Federal Trade Commission, the Environmental Protection Agency, the Federal Energy Regulatory Commission<sup>1</sup> the Government Accountability Office, other Federal agencies, when necessary to carry out their duties and responsibilities under this and other statutes, but such agencies and agency heads shall not release such information to the public. This section is not authority to withhold information from Congress or any committee of Congress upon request of the chairman or ranking minority member.

【42 U.S.C. 5916】

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<sup>1</sup> So in law. A comma probably should appear.